

**IN THE CLAIMS**

Please amend the claims as follows.

1. (Previously Presented) A resource allocator operable to allocate a plurality of resources among a plurality of tasks within a process system, the process system capable of executing at least one application process, the resource allocator comprising:

a monitoring controller operable to monitor one or more characteristics associated with the at least one application process, the resources, and the tasks;

a model of the process system representing mathematically the resources and the tasks and defining relationships among related ones of the resources and the tasks as a function of the at least one application process;

a resource allocation controller operable to operate the model in response to ones of the monitored characteristics to allocate ones of the resources among ones of the tasks to execute the at least one application process; and

a graphical user interface operable to identify (i) the resources and (ii) flows between at least some of the resources, the graphical user interface comprising at least one virtual queue associated with at least one of the resources and identifying one or more items to be processed by the at least one of the resources.

2. (Currently Amended) The resource allocator of Claim 1, wherein:

the resources comprise one or more wet decks and one or more furnaces, the one or more furnaces comprising at least one vertical polysilicon furnace; and

one or more virtual queues [[is]] are associated with the at least one vertical polysilicon furnace, the one or more items identified in the one or more virtual queues comprising a plurality of semiconductor wafer lots to be run through the at least one vertical polysilicon furnace.

3. (Currently Amended) The resource allocator of Claim 2, wherein the one or more virtual queues identify [[ies]] a recipe associated with each semiconductor wafer lot, a number of semiconductor wafers in each semiconductor wafer lot, and a latest time when each semiconductor wafer lot should be provided to the at least one vertical polysilicon furnace.

4. (Currently Amended) The resource allocator of Claim 3, wherein the one or more virtual queues [[is]] are associated with [[a]] one or more spreadsheets, the one or more spreadsheets comprising additional information about the semiconductor wafer lots.

5. (Currently Amended) The resource allocator of Claim 2, wherein the graphical user interface comprises:

a first portion identifying at least two types of semiconductor wafers to be processed; and  
a second portion identifying the one or more wet decks, one or more furnaces, and flows of semiconductor wafer lots between at least some of the one or more wet decks and the one or more furnaces, the second portion comprising the one or more virtual queues.

6. (Previously Presented) The resource allocator of Claim 5, wherein the first portion comprises a plurality of buckets, each bucket associated with one type of item to be processed by the resources, each bucket identifying a plurality of time periods and a number of items to be processed during each of the time periods.

7. (Original) The resource allocator of Claim 6, wherein each bucket is associated with a spreadsheet, the spreadsheet comprising additional information about the items of the associated item type to be processed.

8. (Previously Presented) The resource allocator of Claim 5, wherein the second portion comprises a plurality of objects, each object associated with one of the resources, at least two different types of resources associated with objects of different shapes.

9. (Original) The resource allocator of Claim 8, wherein at least one object has at least one of an associated color and an associated shading that identifies a status of the resource associated with the object.

10. (Currently Amended) The resource allocator of Claim 8, wherein at least one object identifies a number of items being processed by the resource associated with the object and a number of the items to be provided to the resource associated with the one or more virtual queues.

11. (Currently Amended) A method for allocating a plurality of resources among a plurality of tasks within a process system, the process system capable of executing at least one application process, the method comprising:

monitoring one or more characteristics associated with the at least one application process, the resources, and the tasks;

modeling the process system using a model to represent mathematically the resources and the tasks and to define relationships among related ones of the resources and the tasks as a function of the at least one application process;

operating the model in response to ones of the monitored characteristics to allocate ones of the resources among ones of the tasks to execute the at least one application process; and

generating a graphical user interface operable to identify (i) the resources and (ii) flows between at least some of the resources, the graphical user interface comprising at least one virtual queue associated with at least one of the resources and identifying one or more items to be processed by the at least one of the resources.

12. (Currently Amended) The method of Claim 11, wherein:

the resources comprise one or more wet decks and one or more furnaces, the one or more furnaces comprising at least one vertical polysilicon furnace; and

one or more virtual queues [[is]] are associated with the at least one vertical polysilicon furnace, the one or more items identified in the one or more virtual queues comprising a plurality of semiconductor wafer lots to be run through the at least one vertical polysilicon furnace.

13. (Currently Amended) The method of Claim 12, wherein the one or more virtual queues identify ~~[[ies]]~~ a recipe associated with each semiconductor wafer lot, a number of semiconductor wafers in each semiconductor wafer lot, and a latest time when each semiconductor wafer lot should be provided to the at least one vertical polysilicon furnace.

14. (Currently Amended) The method of Claim 13, further comprising opening ~~[[a]]~~ one or more spreadsheets in response to user input, the one or more spreadsheets associated with the one or more virtual queues and comprising additional information about the semiconductor wafer lots.

15. (Currently Amended) The method of Claim 12, wherein the graphical user interface comprises:

a first portion identifying at least two types of semiconductor wafers to be processed; and  
a second portion identifying the one or more wet decks, one or more furnaces, and flows of semiconductor wafer lots between the one or more wet decks and the one or more furnaces, the second portion comprising the one or more virtual queues.

16. (Previously Presented) The method of Claim 15, wherein the first portion comprises a plurality of buckets, each bucket associated with one type of item to be processed by the resources, each bucket identifying a plurality of time periods and a number of items to be processed during each of the time periods.

17. (Original) The method of Claim 16, further comprising opening a spreadsheet associated with one of the buckets in response to user input, the spreadsheet comprising additional information about the items of the associated item type to be processed.

18. (Previously Presented) The method of Claim 15, wherein the second portion comprises a plurality of objects, each object associated with one of the resources, at least two different types of resources associated with objects of different shapes.

19. (Currently Amended) The method of Claim 18, wherein:  
at least one object has at least one of an associated color and an associated shading that identifies a status of the resource associated with the object; and  
at least one object identifies a number of items being processed by the resource associated with the object and a number of the items to be provided to the resource associated with the one or more virtual queues.

20. (Previously Presented) A computer program embodied on a computer readable medium and operable to be executed by a processor, the computer program comprising computer readable program code for generating a graphical user interface, the graphical user interface comprising:

a first portion identifying at least two types of semiconductor wafers to be processed by at least one of one or more wet decks and one or more furnaces, the one or more furnaces comprising at least one vertical polysilicon furnace; and

a second portion identifying the one or more wet decks, the one or more furnaces, and flows of semiconductor wafer lots between the one or more wet decks and the one or more furnaces;

the second portion comprising at least one virtual queue operable to identify one or more semiconductor wafer lots that have been scheduled to be processed by the at least one vertical polysilicon furnace.

21. (Currently Amended) The computer program of Claim 20, wherein the at least one virtual queue identifies a recipe associated with each semiconductor wafer lot, a number of semiconductor wafers in each semiconductor wafer lot, and a latest time when each semiconductor wafer lot should be provided to the at least one vertical polysilicon furnace.



22. (Currently Amended) The computer program of Claim 21, further comprising computer readable program code for providing [[a]] at least one spreadsheet in response to user input, the at least one spreadsheet associated with the at least one virtual queue and comprising additional information about the semiconductor wafer lots.

23. (Original) The computer program of Claim 20, wherein the first portion comprises a plurality of buckets, each bucket associated with one type of semiconductor wafer to be processed by the one or more wet decks and the one or more furnaces, each bucket identifying a plurality of time periods and a number of semiconductor wafers to be processed during each of the time periods.

24. (Original) The computer program of Claim 23, further comprising computer readable program code for providing a spreadsheet associated with one of the buckets in response to user input, the spreadsheet comprising additional information about at least some of the semiconductor wafers to be processed.

25. (Original) The computer program of Claim 20, wherein the second portion comprises a plurality of objects, each object associated with one of the wet decks or furnaces, wherein one or more objects associated with the one or more wet decks have a different shape than one or more objects associated with the one or more furnaces.

26. (Currently Amended) The computer program of Claim 25, wherein:

at least one object has at least one of an associated color and an associated shading that identifies a status of the wet deck or furnace associated with the object; and

at least one object associated with at least one of the one or more furnaces identifies: (i) a number of semiconductor wafers being processed by the at least one furnace associated with the at least one object, and (ii) a number of those semiconductor wafers to be provided to the at least one vertical polysilicon furnace.